

Reporting of LOD and LOQ (3/18/03)

There has been an ongoing problem with some permittees not filling in the blanks for LOD (limit of detection) and LOQ (limit of quantitation) on the bottom half of the Discharge Monitoring Reports (DMRs) in the QA/QC Section. This information is needed for some parameters to properly determine compliance with effluent limitations.

Please fill in the LOD and LOQ blanks for each parameter, except for the list of parameters where LOD and LOQ reporting is not required. That list was last sent to all permittees with the DMR mailing in September 2002. Although NR 149 requires that certified and registered labs determine LODs and LOQs for virtually all substances, common parameters where LOD and LOQ are **not required** to be reported on DMRs include:

- Flow rate
- BOD, suspended solids, pH, temperature
- Total phosphorus
- Fecal coliform
- Parameters reported in units of mass (for example, pounds per day)
- Whole Effluent Toxicity (WET)

Common parameters where LOD and LOQ **is required** to be reported on DMRs include:

- Chlorine residual concentrations
- Ammonia nitrogen concentrations
- Metals concentrations in effluent (but not sludge or biosolids)

For a complete listing of the parameters that do and do not require reporting of LOD/LOQs go to <http://webtest.dnr.state.wi.us/org/water/wm/ww/parameters.pdf> on the Department's web site or request a copy from your DNR Region's basin engineer/specialist or DMR contact.

Future improvements - We are working on a process where the Department will pre-print DMRs with X's in the boxes for parameters that don't require LOD/LOQ reporting. We hope that will make it easier in the future for you to see where you have missed recording information.

- **Chlorine residual** - Many municipal permittees and some industrial permittees must test for chlorine. If your facility chlorinates and also de-chlorinates, your permit probably has language labeled Total Residual Chlorine in the Standard Requirements part that allows you to use 100 µg/L (0.1 mg/L) as a reporting limit. In this case, you should record 100 µg/L in both the LOD and LOQ blanks for chlorine residual. All values less than 100 µg/L determined using an approved method should be reported as < 100 µg/L.

If you chlorinate but do not de-chlorinate, you should determine your own LOD and LOQ. Most labs use the MDL procedure to find the LOD. The LOQ is then 3.3 times the LOD.

- **Ammonia nitrogen, metals and other substances** - Your lab should have determined the LOD and LOQ for these substances and should be reporting the numbers to you.

Just as a reminder on how to report data close to the detection limit of a test method, you should not report numerical results that are smaller than the LOD. If a result is not detected, report < (less than) the value of the LOD. You should report numerical results between the LOD and LOQ but recognize that a result in this range is less certain than one above the LOQ.